

AD-A052 110

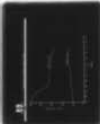
DEFENSE SYSTEMS MANAGEMENT COLL FORT BELVOIR VA
LABORATORY REIMBURSEMENT POLICY, A PROSPECTIVE.(U)
NOV 77 O T POKORNY

F/G 5/1

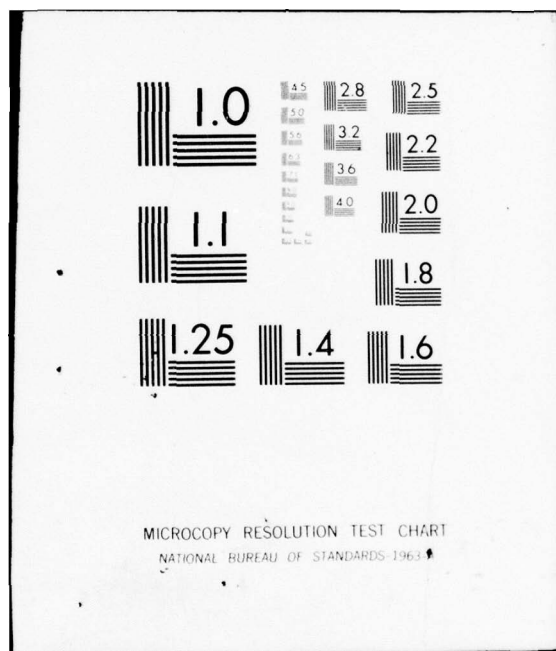
UNCLASSIFIED

NL

OF
AD
A052110



END
DATE
FILMED
5-78
DDC



AD-A052110

1

DEFENSE SYSTEMS MANAGEMENT COLLEGE

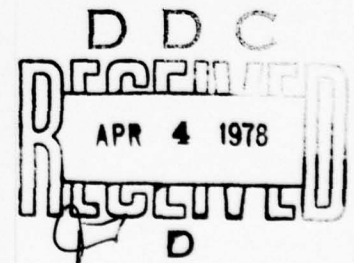


PROGRAM MANAGEMENT COURSE INDIVIDUAL STUDY PROGRAM

LABORATORY REIMBURSEMENT POLICY,
A PROSPECTIVE

STUDY PROJECT REPORT
PMC 77-2

Otto T. Pokorny
Major USAF



FORT BELVOIR, VIRGINIA 22060

DISTRIBUTION STATEMENT A

Approved for public release;
Distribution Unlimited

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) LABORATORY REIMBURSEMENT POLICY, A PROSPECTIVE		5. TYPE OF REPORT & PERIOD COVERED Study Project Report 77-2
7. AUTHOR(s) OTTO T. POKORNY		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS DEFENSE SYSTEMS MANAGEMENT COLLEGE FT. BELVOIR, VA 22060		8. CONTRACT OR GRANT NUMBER(s)
11. CONTROLLING OFFICE NAME AND ADDRESS DEFENSE SYSTEMS MANAGEMENT COLLEGE" FT. BELVOIR, VA 22060		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE 1977-2
		13. NUMBER OF PAGES 39
		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) UNLIMITED		
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> DISTRIBUTION STATEMENT A Approved for public release; Distribution Unlimited </div>		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		ACCESSION for NTIS <input checked="" type="checkbox"/> Info Section GPO <input type="checkbox"/> Ref Section UNANNOUNCED <input type="checkbox"/> IDENTIFICATION
18. SUPPLEMENTARY NOTES		BY DISTRIBUTION/AVAILABILITY CODES Dist. Avail. and/or SPECIAL
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) SEE ATTACHED SHEET		<div style="border: 1px solid black; padding: 10px; display: inline-block;"> A </div>
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) SEE ATTACHED SHEET		

DEFENSE SYSTEMS MANAGEMENT COLLEGE

STUDY TITLE:

LABORATORY REIMBURSEMENT POLICY, A PROSPECTIVE

STUDY PROJECT GOALS: To understand the rationale for the implementation of this new policy and explore the potential impact on the financial resources of the Air Force laboratories as well as potential customers.

STUDY REPORT ABSTRACT: This study project reviews the historical events which resulted in the new reimbursement policy. The difference between it and the T&E Uniform Funding Policy are highlighted and a subjective evaluation of the expected funding increase is made with respect to the laboratories and different categories of customers. The data base includes published and unpublished documents as well as information obtained from interviews with key individuals who are highly cognizant of both sides of the reimbursement policy. The report is useful to any potential customer of the laboratories since it will yield a better understanding of the reimbursement policy.

The R&D contracting portion of the laboratories 6.2 funding line was reduced by 50% from the mid sixties to the mid seventies. DDR&E concern for the continued erosion of the technology base funding level resulted in several policy changes which were aimed at reversing this funding trend. One of these was to charge non-technology base customers for salaries of laboratory support.

The reimbursement policy is being implemented over a two year period. During FY 78 reimbursement will be charged for work done for other agencies or non-RDT&E organizations. Reimbursement from other Air Force RDT&E organizations (other than laboratory) will start in FY 79. Laboratory commanders/directors have been given wide latitude in working out reimbursement on a case-by-case basis.

The potential results indicate a modest increase in R&D funds for contracting from the implementation of the new policy. However, the laboratories are not expected to push for salary reimbursements from other DOD agencies. Viewed from the perspective of the rationale for its implementation, the expected results of the policy more than meet DDR&E original criteria.

SUBJECT DESCRIPTORS: Technology Base (10.01.01), Funds Management (10.06.02), Development Test & Evaluation (10.08.02)

NAME, RANK, SERVICE	CLASS	DATE
Major Otto T. Pokorny, USAF	PMC 77-2	November 1977

LABORATORY REIMBURSEMENT POLICY, A PROSPECTIVE

Study Project Report
Individual Study Program

Defense Systems Management College
Program Management Course
Class 77-2

by

Otto T. Pokorny
Major USAF

November 1977

Study Project Advisor
Lt Col Porter Venn, USAF

This study project report represents the views, and conclusions of the author and does not necessarily reflect the official opinion of the Defense Systems Management College or the Department of Defense.

EXECUTIVE SUMMARY

This study project report explores the background of the new Air Force laboratory reimbursement policy to provide an understanding of the reasons for its implementation. The highlights of the policy are reviewed, and a subjective evaluation of the expected financial results is made with respect to the laboratories as well as different categories of customers. Several conclusions are drawn.

The report is primarily based on published and unpublished documents, and interviews with key individuals in the Office of the Director of Science and Technology and the Deputy Chief of Staff, Systems. Based on this information, the conclusions are drawn that: the decision implementing the reimbursement policy as a complementary way of reversing the funding trend in the technology base was a good one. The expected reimbursement levels appear reasonable and what one might expect for the early phase of such a program. However, at the present time, the laboratories are not expected to push for reimbursements from the Defense Advanced Research Project Agency (DARPA) and other Department of Defense (DOD) agencies. Laboratory commanders/directors have been given a large degree of flexibility in working out specific reimbursement policy with customers. Secondary benefits are: increased visibility of cost on internal laboratory programs which should increase efficiency of programs, and resulting levels of reimbursement will be an

indication of the coupling between the laboratories and customers and how the customer really feels about the laboratories as a source of technical support.

This report should be useful to any potential customer of the laboratories since it will yield a better understanding of the finer points of difference between the laboratories and the test centers with respect to the reimbursement policies.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ii
-----------------------------	----

Section

I. INTRODUCTION	1
Purpose of the Study Project	1
Specific Goals of the Study Project	1
Scope and Limitations of the Study Project	2
Organization of Report	2
Definitions and Abbreviations	3
II. BACKGROUND	4
III. IMPLEMENTATION	14
Reimbursement Policy	14
Status	15
IV. IMPACT ON LABORATORIES	17
Recent Experience	17
Analysis of FY 78	18
Analysis of FY 79	21
Other Considerations	23
V. IMPACT ON CUSTOMERS	26
Analysis of FY 78	26
Analysis of FY 79	27
A Specific AFSC Customer	28
VI. CONCLUSIONS	31

ILLUSTRATIONS

Figure 1	Exploratory Development Funding History . . .	7
Table 1	Proposed Laboratory Reimbursement Policy . .	12
Table 2	FY 76 Customer Support	17
Table 3	FY 78 Reimbursement Support	19
Table 4	FY 79 Reimbursement Support	21
Table 5	ABRES Direct Mission Support	28

LIST OF REFERENCES	33
------------------------------	----

SECTION I
INTRODUCTION

Purpose of the Study Project

This study will explain the rationale for the new laboratory reimbursement policy. In addition, it will provide an analysis of the potential impact on the financial resources of the Air Force laboratories and selected categories of customers.

In today's environment of tight fiscal resources, the temptation is to downgrade our investment in the technology base. Maintenance of the technology base is the responsibility of the Air Force laboratories assigned to the Air Force Systems Command (AFSC). The relationship between maintaining a strong and usable technology base and the new reimbursement policy will be addressed in this report.

Specific Goals of the Study Project

The specific goals of the study project include:

- Understand the rationale for implementing the new reimbursement policy in the Air Force laboratories.
- Explore and understand the implementation of the policy.
- Examine the potential effects on the laboratories.
- Examine the potential effects on different categories of customers.
- Determine the overall effectiveness of the policy as viewed from the objective of implementation.

Scope and Limitations of the Study Project

Although the DOD is concerned with the level of funding throughout the technology base in all services, this study is limited to the portion of the technology base which resides in the Air Force laboratories.

The assumption is made that the reader is somewhat familiar with the current test and evaluation funding policy.

Organization of Report

This study is divided into six sections. Section II addresses the rationale for the reimbursement policy and the basic content of the policy. Section III reviews the policy as implemented along with its status. Section IV develops a common baseline from which to judge the effectiveness of the expected results of the policy. Budget Data for FY 78 and FY 79 are gathered and evaluated against the baseline to determine potential effect on the laboratories. Section V develops the potential effects on customers utilizing laboratory support. Section VI cites conclusions drawn from the study.

DEFINITIONS AND ABBREVIATIONS

ABRES	Advanced Ballistic Re-entry Systems
AFFDL	Air Force Flight Dynamics Laboratory
AFGL	Air Force Geophysics Laboratory
AFML	Air Force Materials Laboratory
AFOSR	Air Force Office of Scientific Research
AFRPL	Air Force Rocket Propulsion Laboratory
AFSC	Air Force Systems Command
DARPA	Defense Advanced Research Project Agency
DDR&E	Director Defense Research and Engineering
DNA	Defense Nuclear Agency
DOD	Department of Defense
EEIC	Element of Expense Investiture Cost
JOCAS	Job Order Cost Accounting System
NOA	New Obligation Authority
O&M	Operations & Maintenance
OPR	Office of Primary Responsibility
PE	Program Element
PEG	Program Evaluation Group
POM	Project Objective Memorandum
RADC	Rome Air Development Center
RBA	Reimbursable Budget Authority
Technology Base	- The Research (6.1), Exploratory Development (6.2), and Nonspecific systems related Advanced Development (6.3A) Programs.
TOA	Total Obligation Authority

- 6.1 Research Program
- 6.2 Exploratory Development
- 6.3 Advanced Development
- 6.3A Advanced Development Not Related to Specific Systems
- 6.4 Engineering Development

SECTION II

BACKGROUND

BACKGROUND

In February 1977, the DOD policy on reimbursement was revised to allow Air Force laboratories to receive reimbursement for work being performed for others. This change in policy was not effected merely to allow the laboratories to grow bigger, it was part of a continuing effort on the part of DOD to assure maintenance of a strong and viable technology base with adequate funds being available for R&D contracting as well as for use "in-house" within the laboratories.

During the 1965-1975 time period, the technology base was, for all practical purposes, level funded. However, with no allowance for inflation, the actual buying power of the dollars available at the end of this period approximated only 53% of what had been realized in the mid sixties. Non-technology base programs had, on the other hand, been more closely aligned with the effects of inflation; and, as a result, the percentage of the total RDT&E program attributed to the technology base had declined from 24% in the mid-sixties to approximately 16%. (1:7-1)¹

¹This notation will be used throughout the report for sources quotations and major references. The first number is the source listed in the List of References. The second number is the page in the reference.

It became painfully obvious to the DOD that this erosion of the technology base must not be allowed to continue. Although funds invested in our future via the research and exploratory development programs deny the availability of the funds today for development and procurement of urgently needed weapon systems, it was also recognized that failure to maintain an adequate technology base would necessarily extract a price in future capabilities. (2:7-1) Therefore, in FY 74, action was initiated within DOD to prevent further erosion of the technology base. OSD guidance to the services for preparation of the FY 76 budget, dictated an increase in research of 10% a year above inflation through FY 80 and an increase of 5% per year above inflation for exploratory development through FY 78. At the end of these periods, funding in both categories was to be maintained at the constant percentage of the total RDT&E budget thus achieved. (1:7-10)

In taking this first action, DOD recognized that under the level funding previously afforded Air Force laboratories, there had been a general decline in the funds available for placing on R&D contracts with industry. As illustrated in Figure 1, the decreased purchasing power due to inflation was at the same time accompanied by a steady increase in support costs which in FY 75 consumed 50% of the total funds available as opposed to only 22% in FY 65. The support portion of the 6.2 programs is driven by civilian salaries which now comprise 75% to 85% of



EXPLORATORY DEVELOPMENT FUNDING HISTORY

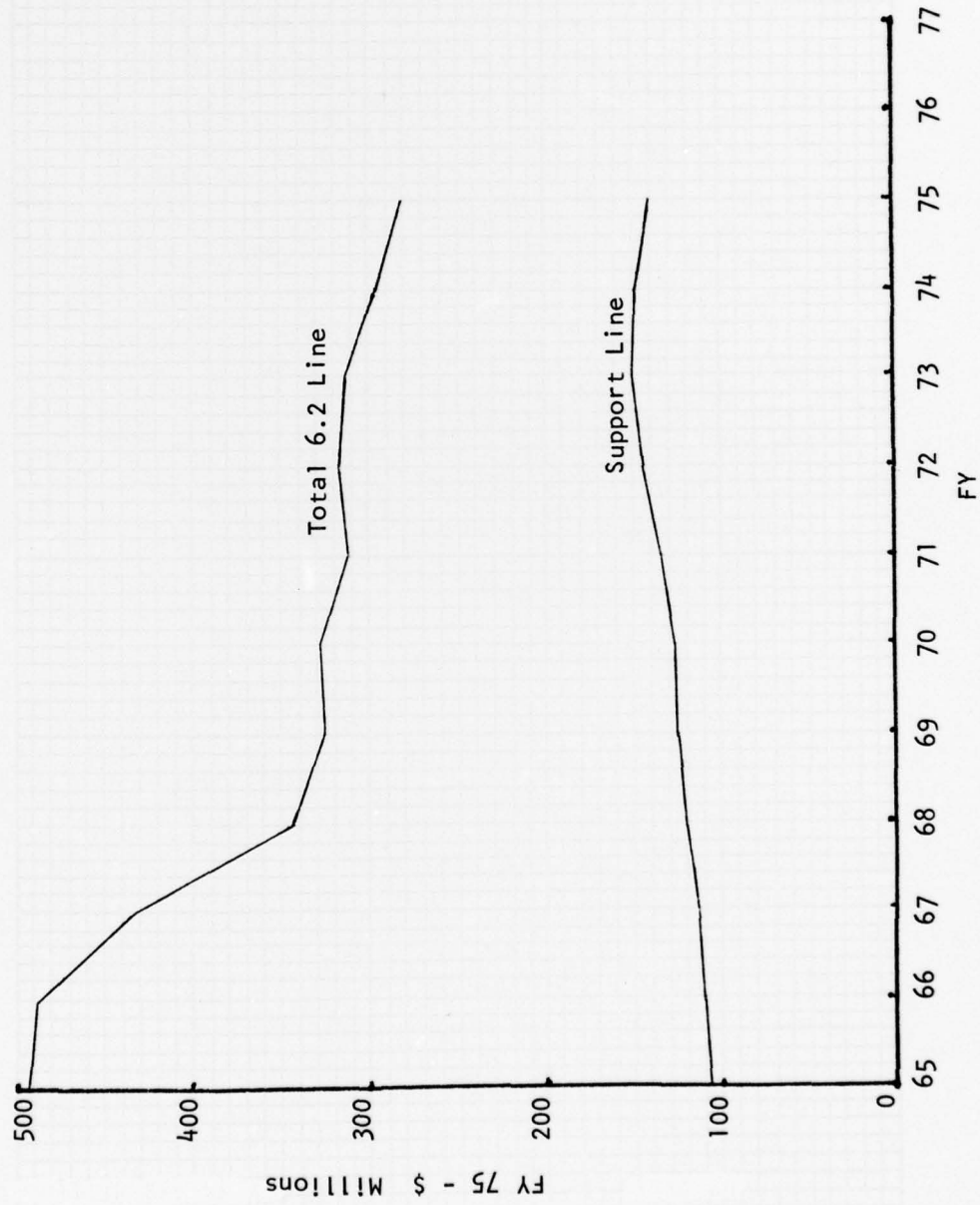


FIGURE 1

the total support cost. During the period under discussion, civilian manning in the Air Force laboratories increased by approximately 20% (1600 spaces). This increased manning can be attributed to several factors not the least of which was various organizational changes occurring in response to the emphasis being given to building up in-house centers of excellence. Project REFLEX¹ was also a contributor. In addition, pay raises accounted for a significant portion of the overall increase in support costs. Irrespective of the reasons, since the level of R&D contractual effort is the difference between the support line and the total line, the convergence of these became a matter of concern to the Director Defense Research and Engineering (DDR&E).

The Air Force was also pursuing possible alternate approaches which could offset the effect of inflation. Acting upon an Air Force Study Group recommendation, HQ AFSC in CY 74 requested HQ USAF concurrence/guidance in modifying existing funding policies regarding laboratory salary support. (4:2) More than a year later, the DOD Laboratory Utilization Report confirmed the wisdom of this action when its findings estimated

¹Project REFLEX (Resource Flexibility) was a Department of Defense demonstration project which involved ten DOD in-house laboratories including three from the Air Force. These laboratories were allowed to operate without manpower ceilings, i.e., local laboratory management was given the freedom to adjust personnel levels to match workload requirements and available funds. (3:64)

the laboratories' direct support to the system development process (the latter stages of category 6.3 and 6.4) to be about 25%. The DOD report, which noted that this support was being provided at little or no cost to the product division customers, recommended: "The Air Force should discontinue its practice of providing all salary support to laboratory people from main laboratory line program element irrespective of the task to which they are assigned." (5:58) Thus, the stage was set for a new reimbursement policy.

Another step in this direction was achieved when in FY 76, the Air Force Office of Scientific Research (AFOSR) was designated as the single Air Force manager for basic research. This action also implemented a recommendation originating in the AF Study and subsequently indorsed by the DOD Report. The ensuing reorganization provided for a decrease in the emphasis formerly placed on in-house basic research and resulted in the research community placing approximately 70% of its basic research effort on contract to external sources. This shift in emphasis was oriented toward assuring appropriate coordination was maintained between the single manager (AFOSR) and other R&D organizations outside the Air Force. At the same time, to assure some continued in-house capability, an inducement was offered to other Air Force laboratories whereby AFOSR would reimburse the laboratory for all costs (both direct and in-direct) related to the people conducting basic research. Implementation of this reimbursement did not occur, as a general rule, until FY 77.

In FY 75, AFSC started work in earnest to develop a reimbursement program which would be compatible with the existing reimbursement process which had resulted from Project REFLEX.

As was mentioned earlier, three Air Force laboratories were allowed to operate without manpower ceilings, which gave the local laboratory management freedom to adjust personnel levels to match workload requirement within available funds. Under Project REFLEX, civilian manpower grew by about 700 or 50%.

(6:17) A means of paying for this increased manpower was crucial to exploiting the advantages of operating without manpower ceilings. REFLEX laboratories had the authority to use funds within their 6.2 program element (PE) to pay for additional salaries. In addition, they were exempted from the restrictions of AFSC Regulation 172-2, enabling them to reimburse salary costs from mission funds in other program elements. A stipulation was that only salaries of REFLEX personnel could be reimbursed. When Project REFLEX was discontinued, the reimbursement authority was continued. Two of the three laboratories utilized the authority to the greatest possible extent. These laboratories did not discriminate between categories of customers; they reimbursed from technology base as well as non-technology base program elements.

During FY 7T, DDR&E requested Air Force views on adopting a policy whereby reimbursement of the technology base program

would be common practice for Air Force non-technology base work and for non-Air Force work. (7:-) It was DDR&E's objective to have the Air Force begin implementing such a policy during FY 77 and FY 78 to the extent possible. Air Force, in turn, requested an AFSC position on the policy.

The AFSC response included the following points: (8:1)

- o Supported need for reimbursement from program outside technology base.
- o Concern about potential reduced funding levels in system development and acquisition programs, caused by reimbursement.
- o Proposed reimbursement policy would require changes to pertinent Air Force regulations and manuals.
- o A proposed reimbursement policy with realistic implementation schedule.
- o AFSC had gone as far as possible without direction to implement a revised reimbursement program.
- o AFSC was awaiting a response from the field to determine the level of the proposed reimbursement program which would be forwarded along with recommendations.

Table 1 shows a summary of the proposed laboratory reimbursement policy which was compatible with existing reimbursement policy being utilized by the two REFLEX laboratories.

TABLE 1

PROPOSED LABORATORY REIMBURSEMENT POLICY

- O The Air Force 6.2 program be reimbursed for work which is done for other agencies or non-RDT&E organizations beginning in FY 78.
- O Reimbursement between and within Air Force laboratories be implemented beginning in FY 78.
- O Reimbursement from other Air Force RDT&E organizations to the technology base be implemented beginning in FY 79.

The effect in terms of additional funds to the laboratory was forecast based on supplementary data received from the laboratories in response to an amended FY 78 Budget Estimate Call. (9:2) The results of this study indicated that the recommended change to the reimbursement policy in FY 78 could generate as much as \$9M from non 6.1 and 6.2 laboratory programs. Analysis of backup data used to arrive at this value indicated the Air Force was conservative in this estimate.

Based on this anticipated return, the laboratories recommended the phased implementation of the proposed reimbursement policy starting in FY 78 provided the integrity of the 6.2 line was maintained. (10:-) The concern of the laboratories was one of maintaining status quo in the 6.2 funding level. In the recent past, the integrity of the 6.2 program had been maintained by making it a DDR&E interest item, thus making it practically impossible to reduce the funding level without DDR&E approval.

This procedure had been very successful in maintaining the integrity of the 6.2 funding line.

In February 1977, DDR&E approved the proposed reimbursement policy and directed implementation to begin in FY 78. (11:-)

SECTION III

IMPLEMENTATION

REIMBURSEMENT POLICY

Laboratory reimbursement policy and procedures are very similar to those prescribed for the R&D centers and ranges. One of the main differences is that the laboratory commander/director has been delegated authority to waive reimbursement from Air Force customers for amounts up to \$20,000 on a case-by-case basis. (12:2) This waiver authority is intended to permit each laboratory director to refrain from charging for informal support when they deem reimbursement to be inconsistent with prudent business practices. Generally, informal support is effort provided on a quick reaction basis to a customer who hasn't been given an opportunity to budget for the requirement. It is also designed to provide the laboratories a reasonable degree of flexibility in administering reimbursements and handling trade offs.

Another significant difference is that the laboratory commander/director may negotiate the laboratories contribution to a joint effort (with other laboratories, Air Force organizations and DOD agencies) in cases where mutual benefit exists. The only stipulation is that a memorandum of agreement, AFSC Form 607, must be initiated clearly outlining each participant's contribution.

STATUS

It has already been mentioned that effective in FY 77 laboratories started receiving reimbursement for all costs (direct and indirect) in support of the research program (PE 61102F) from AFOSR. This is not part of the change directed from DDR&E, but is mentioned only for completeness.

The Air Force laboratories have also had the authority to charge other DOD organizations for all direct costs. (13:-) However, in order to maintain a productive relationship with organizations such as DARPA, the labs elected to ask for reimbursement of other direct costs only (excluding civilian salaries). In FY 78, the laboratories will also seek reimbursement for salaries from this category of customer. As was mentioned earlier, each laboratory commander/director has the prerogative of negotiating with the customer on a case-by-case basis what contribution the laboratory is willing to make to such a joint effort. We shall discuss briefly, in a later section, in which direction the laboratories are headed with respect to this area.

The major change in FY 78 as far as reimbursing for support will be to the laboratories own 6.3 and 6.4 programs; some of which are within the technology base and some of which are not.

In FY 79, all other RDT&E programs assigned to AFSC organizations other than a laboratory will start reimbursing individual

laboratories for direct cost of support (subject to the thresholds discussed before.)

It must be pointed out that the sole difference between the past policy and the new reimbursement policy is that of charging for direct salary support. Analysis of the impact of this policy change on both the laboratory and the customer will be focused on this fact.

SECTION IV
IMPACT ON LABORATORIES

RECENT EXPERIENCE

In FY 76, the latest composite data available, the Air Force laboratories spent approximately 30% of their direct mission expenditures to support other than laboratory programs. (14:34) The distribution of these charges is shown below in manyears by customer category.

TABLE 2
FY 76 CUSTOMER SUPPORT

<u>Customer Category</u>	<u>Support-Manyears</u>	<u>% of Direct Mission Spt</u>
Other AFSC	796.8	17.3
Other Air Force	296.3	6.4
Other DOD	241.8	5.2
Non-DOD	<u>41.3</u>	<u>.9</u>
TOTAL	1376.2	29.8

If one assumes that each manyear costs in the range of \$25K to \$30K, and one takes into consideration that seven out of ten manyears is civilian (approximate percentage of civilians) then the maximum expected salary reimbursement would be in the range of \$24.1M to \$28.9M. This is probably a conservative estimate since the quality of people supporting such efforts tends to be a higher grade individual who has been in the business for a period of years.

Based on the FY 77 6.2 funding level, this level of reimbursement would be equivalent to increasing the total 6.2 line by an additional 7.5%, which would directly increase the size of the R&D contract line by an equal amount. These common baselines will allow some relative conclusions to be drawn about the size of the various customer reimbursement levels.

ANALYSIS OF FY 78

Best estimates of the current years reimbursement were derived by analyzing the FY 79/80 budget estimates recently received from the field. (15:-) A summary of these data show the laboratories have budgeted for \$59.3M of reimbursements. This figure is composed of: Salaries - \$24.7M, TDY - \$4.4M, and other support - \$30.2M. As mentioned earlier, the real difference between the prior reimbursement policy and the new reimbursement policy is authority to charge for salaries, we will focus on that category of reimbursement. Distributing the salaries by customer category allows one to make some relative comparisons with the original FY 78 reimbursement estimate which was developed from field input in the FY 78 budget estimate submissions. Both the original FY 78 estimate and the latest FY 78 estimate are shown in Table 3.

TABLE 3
FY 78 REIMBURSEMENT SUPPORT

<u>Customer Category</u>	<u>Original Reimb Est</u>	<u>Latest Reimb Est</u>
Technology base	} \$26.500	\$16.508
Non-Tech base		3.793
Other AFSC	1.100	2.638
Other Air Force	0	.519
Other Agencies	<u>1.900</u>	<u>1.307</u>
TOTAL	\$29.500	\$24.765

The amount of reimbursement received for salaries in FY 77 was \$16.4M (16:-) Comparing the latest estimate in Table 3 with the FY 77 level shows an increase of about \$8.4M (\$24.8 - \$16.4M). This increase compares favorably with the original estimate of \$9M which was furnished by the Air Force and apparently used by DDR&E in making the final decision on implementing reimbursement. However, if we look only at new funds coming into the technology base, the \$8.4M is reduced to about \$5.5M. New funds are dollars for support to non-technology base, other Air Force and other agency customers now being provided for the first time and which would really free equal 6.2 funds to be placed on R&D contracts. The remaining \$2.9M (\$8.4M - \$5.5M) is being reimbursed from 6.3 program within the technology base. Using an average cost/manyar of \$27.5K, the expected reimbursement for FY 78 can be converted to a level of direct mission support. Combining the last two customer categories in Table 3 and converting to

direct mission support results in a level of about 66 manyears. The level of support for these customer categories has remained fairly constant in recent years. (14:48) Analysis of the expected reimbursement along with the actual FY 76 support level reveals that the laboratories will collect for about 24% of the actual support in FY 78. Why such a low level of reimbursement? Analysis of the customers in this category reveals that two of the largest are: The Defense Nuclear Agency (DNA) and DARPA, both of which have enjoyed a close working relationship with the laboratories. It is only natural that the laboratories are somewhat hesitant to suddenly start charging for their support. The fact that this relationship has been so good is in some fashion due to the past policy of not charging for manpower even though the laboratories have had the authority for the past two or three years.

Indications are that the laboratory commander will exercise his authority to negotiate his contribution toward a joint effort where mutual benefits exist, particularly with other DOD agencies. For FY 78, the Rome Air Development Center (RADC) plans to charge DARPA for roughly 15% of their support, indicating the remaining program is of mutual interest to the Air Force. (17:-)

It is interesting to note that other DOD agencies transferred \$70.8M into the laboratory structure in FY 76 (14:5) This level represented about 8% of the total funds spent by the

laboratories and was mostly for support of R&D contracts.

In return, the laboratories picked up the salaries of 242 manyears of direct mission support in utilizing these funds. The laboratories apparently feel the cost of this support (about \$7M) is a practical contribution in return for DOD agencies funding support of these technical areas.

Overall in FY 78, for those category of customers outside of the technology base, the increase in the expected level of reimbursement over FY 77 is \$6.5M. Viewed from the original DDR&E objective, these funds will increase the 6.2 R&D contracting by an equal amount over the FY 77 level.

ANALYSIS OF FY 79

The total expected reimbursement level for FY 79 is \$70.4M which includes about \$23.5M for salaries, or an increase of \$7.7M over the FY 78 level. A distribution by customer category is shown in Table 4. (15:-)

TABLE 4
FY 79 REIMBURSEMENT SUPPORT

<u>Customer Category</u>	<u>Latest Reimb Est FY 78</u>	<u>Latest Reimb Est FY 79</u>	<u>Difference</u>
Technology Base	\$16.508	\$18.487	\$1.978
Non-Tech Base	3.673	4.505	.832
Other AFSC	2.758	7.582	4.824
Other Air Force	.519	.691	.172
Other Agencies	<u>1.307</u>	<u>1.243</u>	<u>-.064</u>
TOTAL	\$24.765	\$32.508	\$7.666

Comparing the FY 78 and FY 79 levels in Table 4 shows the increase or decrease by customer category. The total increase is about \$7.7M over the FY 78 level. Since AFSC did not estimate the FY 79 reimbursement level for DDR&E in the original study, we cannot judge how this relates with DDR&E expectations.

Looking at the other AFSC customer category and converting the expected reimbursement into direct mission support yields about 276 manyears. Comparing this level with actual FY 76 levels from Table 2 shows that the laboratories expect to recoup about 35% of the direct mission support furnished to this customer category.

The technology base and non-technology base customers are composed of PEs which are in the laboratory structure and are supported by the 6.2 support line. As was mentioned earlier, reimbursements from the technology base PEs do not represent new funds to the laboratories but an internal shift of funds, and probably will not increase the total funds available for R&D contracting in the technology base. Reimbursement from the non-technology base PEs represent a new source of funds to the technology base, but not to the laboratory funding structure. This latter category of reimbursement is sort of a hybrid since it fulfills the original DDR&E criteria for reimbursing but does not add a new source of funds to the total laboratory funding.

Overall in FY 79 for those category of customers outside of the technology base, the increase in the expected level of reimbursement over FY 78 is \$5.8M. The total increase over FY 77 in reimbursement is \$12.3M. As viewed from the original DDR&E objective, it appears to be a modest way of increasing the technology base contracting effort.

Another way of attempting to get a handle on the degree of implementation the reimbursement program is to compare the expected levels of reimbursement with those in Table 2. In doing so, we see the expected level of reimbursement for the last three customer categories is about \$9.5M for FY 79 as compared with \$26.5M from Table 2. This indicates the laboratories have probably made a good start but have the potential to almost triple their reimbursement level.

OTHER CONSIDERATIONS

Implementation of a reimbursement policy in the laboratory structure will lend increased emphasis to the Job Order Cost Accounting System (JOCAS). While this cost accounting system has been around and working for some time, the quality of the output data has been somewhat questionable. Since it will be the basis for billing customers, increased pressure will be levied on the laboratory by the customer to insure he is paying for only what he utilizes. Since the average internal non-6.2 project manager will be paying for his support, careful and more efficient methods will be used to insure he gets the most for

his money. In addition, the need for increased visibility of how he is utilizing his resources will tend to force an improvement in the quality and timeliness of JOCAS data. AFOSR recently requested an audit on the FY 77 6.1 reimbursement program. Findings by an Air Force Audit Agency team from that audit confirm the lax useage of JOCAS data. The final report of the audit is not out at this time, but increased emphasis on improving and using JOCAS data is expected.

Charging for manpower support will, in most cases, tend to increase the cost to the customer such that he will now more carefully consider other sources for support to his program. The outcome will no doubt rest on an economic analysis of the technical support he requires compared to the amount he can afford. Col Caulfield believes the resulting level of reimbursement will be an indication of the coupling between the laboratories and the customers and how the customer really feels about the laboratories as a source of technical support (18:-)

Another area which has been impacted by the introduction of reimbursement is the laboratory budgeting process. The laboratories now budget for TOA (NOA + RBA) instead of just NOA. The expected levels of reimbursement for salaries are taken out of each laboratory's support (O&M) account and placed in the technical projects. Ceilings are placed on each support account to insure funds, resulting from reimbursement, are used in the R&D contracting side of the house.

In those cases where the reimbursement perhaps is not earned from external customers, the laboratories have the capability to move the funds back from the technical projects to cover salaries. This is in contrast to the T&E centers who had to have the funds frozen to assure having adequate funds to cover the facility.

SECTION V
IMPACT ON CUSTOMER

ANALYSIS OF FY 78

The primary source of the additional reimbursement is from within the laboratory structure itself, specifically from the technology base and non-technology base category of customers. When you look at the track of the funding levels of the individual PE and talk with the various Offices of Primary Responsibility (OPR), the single fact that comes thru clear and simple is that, as a general rule, very few of these programs had funds added last year for the additional requirement for reimbursement support. After considering Congressional reductions in the FY 78 President's Budget, there is virtually no doubt that the reimbursements will come at the expense of other work in the program. The overall amount that is being discussed is in the \$5M to \$6M range.

Compared with FY 77 reimbursements, there is an additional amount of reimbursement budgeted in the other AFSC program customer category. It amounts to about \$1.1M which is contained in a few PEs at RADC. RADC considers themselves OPR for these PEs; and according to the revised AFSCR 172-2, they have the authority to charge for their support. The level of the support amounts to about 42 manyears. Again, these PEs will be reimbursing at the expense of other work in the program.

ANALYSIS OF FY 79

Documentation from the field as well as from AFSC was reviewed on a random selection of seventeen PEs which were reimbursing one or more laboratories for support. The selection contained PEs from each of the second and third customer categories. Documentation from the fourth and fifth customer categories was unobtainable. Documentation from the first category was not reviewed since all the programs had generally been covered in the FY 78 analysis section.

Thirteen customers budgeted for laboratory support within their existing approved program or FY 79 Program Objective Memorandum (POM). In these cases, the customers had included their requirements as part of their FY 79 POM submission earlier in the year; or if the requirement developed since that time, they had funded it out of management reserves or at the expense of something else in the program.

Only four programs sampled had budgeted for their laboratory support as an overceiling requirement. However, none of these programs received additional funds for this requirement. In discussion with representatives of the Program Evaluation Group (PEG), this fact was confirmed. In general, overceiling requirements specifically requested for laboratory support were denied.

In general, there was a lack of coordination on the information included in the laboratories' reimbursement and the individual customer budget submission. The problem of evaluating the

laboratory and customer budget input was caused by the lack of consistency. For instance the laboratories were asked for a breakout of individual customer support reimbursement by Element of Expense Investure Code (EEIC), and they complied with the directions. However, the request from the program offices asked only for total support by laboratory for which they expected to reimburse. Some of the program offices included funds which are given to the laboratories for placing on R&D contracts that the laboratories monitor which further distorted the picture.

A SPECIFIC AFSC CUSTOMER

A customer who utilizes the capabilities and talents of a cross section of the laboratories is the Advanced Ballistic Re-entry Systems (ABRES) Program. It draws on four laboratories for support in different technological areas. Table 5 shows the past and projected levels of support to the program. (14:33) (13:-) (17:-)

TABLE 5

DIRECT MISSION SUPPORT (MANYEARS)

<u>Laboratory</u>	<u>Total FY 76</u>	<u>Total FY 77¹</u>	<u>Projected 79</u>
AFFDL	8.9	1.9	3.7
AFGL	25.9	23.0	.7 ²
AFML	2.4	2.5	4.0
AFRPL	<u>14.0</u>	<u>8.2</u>	<u>4.0</u>
TOTAL	51.2	35.6	12.4

¹Total based on July 77 manpower charges.

²Estimate based on amount of funds budgeted for salaries and average pay for laboratory

JOCAS showed that virtually all of the FY 76 charges were categorized as in-house research and technology support. This category is characterized as scientific or engineering evaluation assistance or consultation services where, in the expertise of the laboratory, is used in a supporting way. In order to ascertain what impact, if any, the new reimbursement policy would have on the ABRES Program, I talked with the AFSC OPR, Lt Col Schramme. (19:-)

The yearly level for laboratory support varies. The average historical laboratory support level has been about \$5M. This includes pass thru funds for R&D contracting which the laboratories monitor for them. ABRES program office has been pleased with support furnished by laboratories in the past. Support by the Air Force Flight Dynamics Laboratory (AFFDL) and the Air Force Rocket Propulsion Laboratory (AFRPL) involves simulation of reentry conditions on models at both facilities. He pointed out that the test capability of the 50 Megawatt facility at AFFDL could not be duplicated elsewhere. The Air Force Geophysics Laboratory (AFGL) is involved in a weather sampling program in support of the program.

Overall impact of new reimbursement policy is that they will buy less for their money. It appears that they too were unsuccessful in getting funds added for the costs generated by the new policy. Lt Col Schramme indicated the SPO felt it was a step backward but they would endeavor to live within the policy.

He indicated that the SPO would clearly be looking at contracting with industry as a viable option in each case of doing business with a laboratory. In those cases where it is economically feasible, they may change their mode of operation. For instance, he cited the case where AFGL is leasing an aircraft from a contractor which they use as a weather sampling platform. Consideration will be given to going directly to the contractor and cutting out the laboratory.

I pointed out that the budgeted level of support as viewed from the laboratory side was about 12.5 manyears which would equate to about \$400K or an 8% increase in the historical funding level of the program. He was unsure about the level of next year's support but indicated every effort would be taken to minimize costs.

Apparently it makes little difference about the size of the program or who it belongs to when it comes to getting additional funds for such things as introduction of a new reimbursement program.

SECTION VI

CONCLUSIONS

This study has focused attention on the development of the new reimbursement policy being implemented in the Air Force laboratories. In addition, it assessed the potential impact of this policy on the financial resources of the laboratories as well as different categories of customers. As a result of this study, the following conclusions appear reasonable:

- The projected level of reimbursement appears to meet or exceed the expectations on which the decision was made to implement the policy. A qualifier which goes along with this is: The integrity of the 6.2 funding level must be maintained.

- The rationale for directing the implementation of the reimbursement policy is sound. Clearly, some supplementary way had to be found to help reverse the funding trend in the technology base programs.

- The budgeted amount of reimbursement, from outside the technology base for FY 79, appears reasonable and what one might expect in the first year.

- At the present time, the laboratories are not expected to push to obtain reimbursement from other DOD agencies.

- As a result of implementation of the new reimbursement policy, there will be a purification of the use of 6.2 funds.

- Reimbursement policy coupled with laboratory funding policy allows a great deal of flexibility in funding unearned reimbursement.

- Laboratory commanders/directors have a great deal of flexibility in administering the reimbursement policy on a case-by-case basis. How it will be used, only time will tell.

- Reimbursement for internal laboratory 6.3 and 6.4 programs will increase visibility of costs which will tend to increase efficiency of programs.

- Levels of resulting reimbursement will be an indication of the coupling between the laboratories and customers and how the customer really feels about the laboratories as a source of technical support.

LIST OF REFERENCES

1. Currie, Malcom R., Director of Defense Research and Engineering. Statement on RDT&E Program - FY 78, to the 95th Congress, 18 January 1977.
2. Currie, Malcom R., Director of Defense Research and Engineering. Statement on RDT&E Program - FY 75, Before the Senate Armed Services Committee, 26-27 February 1974.
3. Report on the Special Study Group on the Utilization of the Air Force Laboratories, Headquarters, Air Force Systems Command, Andrews Air Force Base, Maryland, August 1974.
4. Study of Air Force Laboratories, August 1974, letter from HQ AFSC/CC to HQ USAF/CC, 27 August 1974.
The transmittal letter that accompanied the Report on the Special Study Group on the Utilization of the Air Force Laboratories.
5. Allen, John L.; Grantham, Rodney E.; and Nichols, Donald B.; Final Report, the DOD Laboratory Utilization Study, Office of the Director of Defense Research and Engineering, Washington DC, 28 April 1975.
6. Evaluation of Project REFLEX Within the Air Force, AFSC-TR-73-001, HQ Air Force Systems Command, Andrews Air Force Base, Maryland, April 1973.
7. Reimbursement for Salary and Other Expenses in Air Force Laboratories, Office Director of Defense Research and Engineering Memorandum for the Assistant Secretary of the Air Force (R&D), 19 July 1976.
A letter from Dr. Malcom Currie to Dr. Martin indicating concern about the continued drain on the Air Force Technology Base by absence of reimbursement for work done on non-Technology Base and non-Air Force programs, and asking for his views on this matter.
8. Reimbursement for Laboratory Support, letter from HQ AFSC/CV to HQ USAF/RD, 5 August 1976.
The response to Dr. Currie's memorandum of 19 July 1977 which stated general support of the need for reimbursement of the Technology Base, and related current status of the AFSC program to introduce reimbursement.
9. Proposed Change of Laboratory Reimbursement Policy, HQ AFSC/ACB letter to the field, 29 July 1976.
Requested the field to submit an updated FY 78 Budget Submission which would reflect the impact of the new reimbursement policy on all potential customers.

10. Reimbursement for Laboratory Support (Salaries), AFSC/DLX letter to HQ USAF/RDPS, 30 December 1976.
Transmitted the results of a study conducted to determine the expected amount of new reimbursement funds along with the recommendation to press on with the implementation of the reimbursement policy.
11. Technology Base Reimbursement, Office Director of Defense Research and Engineering Memorandum for the Assistant Secretary of the Air Force (R&D), 18 February 1977.
A letter from Mr. John Parker, Acting Director to Dr. John Martin concurring with the Air Force proposed laboratory reimbursement policy and requesting it be implemented as proposed.
12. Funding Support and Use of R&D Activities, AFSCR 172-2, Headquarters Air Force Systems Command, Andrews Air Force Base, Maryland, 15 June 1977.
13. DARPA/AF Laboratory Reimbursement Policy, HQ USAF/RDP/ACB letter to DARPA, 23 May 1975.
Provided DARPA with information on Air Force Laboratory Reimbursement Policy and requested they start negotiations with AFSC for implementing new policy.
14. Management Analysis Report - AFSC Laboratory Operations FY 76, Headquarters Air Force Systems Command, Director of Science and Technology, Andrews Air Force Base, Maryland, December 1976.
Internal AFSC document which consolidates data reported by the Air Force laboratories as portraying their operating posture, and encompasses the subjects of laboratory funds, work structure, work force composition and utilization, and program costs.
15. Collection of FY 79/80 Program/Budget Call for Estimates of Laboratory Operations, HQ AFSC/DLX, 28 July 1977.
Laboratory inputs for the FY 79 President's Budget which included breakout for potential customers at the PE/Organization level.
16. Laboratory Managed Funds, AFSC/DLXB Viewgraph, 30 August 1977.
A distribution of NOA/RBA by fiscal year (FY 77 thru FY 80) broken down by Operations EEIC, (Salary, TDY, Other) and Contracting (Tech Base and Non-Tech Base). It was put together for presentation to the AFSC Council in their review of the AFSC PEG recommendations on the FY 79 President's Budget.

17. FY 78 Salary Reimbursement - DARPA, RADC/DOR letter to HQ AFSC/DLX, 4 March 1977.
Outline of FY 78 DARPA/RADC technical program as well as a distribution of which individual programs were being considered joint programs (RADC did not request salary reimbursement) and those programs which did not benefit the Air Force (RADC was requesting salary reimbursement).
18. Caulfield, Patrick H., Col, USAF. Interview at AFSC/DLX, Andrews AFB, Maryland on 7 October 1977.
Col Caulfield is Director of the Plans and Programs Directorate, Office of the Director of Science and Technology at Air Force Systems Command Headquarters. He has had a long and distinguished career in Air Force research and development and is extremely knowledgeable of the laboratory system.
19. Schramme, David, Lt Col, USAF, Telephone interview at AFSC/SDSM, Andrews AFB on 19 October 1977.
Lt Col Schramme is the OPR for the ABRES Program at HQ AFSC.

